REMARKS

Reconsideration of the instant application is respectfully requested. The present amendment is responsive to the Office Action of April 17, 2006, in which claims 1-18 are presently pending. Of those, claims 1, 2 and 14-17 have been rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent 6,946,403 to Kellerman, et al. In addition, claims 3-5 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Kellerman, in view of U.S. Patent 5,665,166 to Deguchi, et al. Claims 6, 7 and 11-13 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Kellerman, in view of U.S. Patent Publication 2004/0083975 by Tong, et al. Claims 8-10 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Kellerman, in view of Tong and Deguchi. Finally, claim 18 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Kellerman. For the following reasons, however, it is respectfully submitted that the application is now in condition for allowance.

As an initial matter, claims 12 and 13 amended as set forth above to overcome the objections thereto, in terms of proving a point of reference with respect to the terms "positive radius of curvature" and "negative radius of curvature." More specifically, the chucking pedestal itself is the added pointed of reference in the claims. Accordingly, it is respectfully requested that the objection to claims 12 and 13 be withdrawn.

However, with regard to the rejections based on the art of record, the Applicants respectfully traverse the same for at least the reason that none of the cited references, alone or in combination, teach or suggest: (1) the claimed structural feature of an a bi-directional conduit in fluid communication with an electrostatic chucking pedestal; (2) the claimed structural feature of inner and outer zones of a chucking pedestal that are mechanically decoupled from one another; or (3) the claimed method of using carrier gas/vacuum pressure to a backside of a chucking pedestal to assist with chucking force.

Turning first to the §102(e) rejections of 1, 2 and 14-17 based on the Kellerman reference, the Examiner indicates on pages 2-3 of the Office Action that Kellerman discloses an electrostatic chucking pedestal having a bi-directional conduit in fluid communication with a backside of the chucking pedestal. However, a review of the Kellerman reference reveals that element 160 in Figure 2 of Kellerman is not actually equivalent to the claimed chucking pedestal, but is instead "a base plate 160 operable to transfer thermal energy from the substrate 105 and the clamping plate 110." (Col. 12, lines 45-47) In other words, what is termed the "clamping plate" 110 in Kellerman is actually the component that supports the wafer (substrate 105) thereon, using an applied voltage to generate an electrostatic force between the clamping plate 110 and substrate 105. (Col. 6, line 56- col. 7, line 11.)

Therefore, in order for Kellerman to teach a bi-direction conduit in fluid communication with a backside of a chucking pedestal as in the present claims, the clamping plate 110 itself (not a cooling base plate) would have to be provided with such a conduit. As is shown in Figure 2 of Kellerman, no such structural capability is taught or suggested with respect to clamping plate 110. The fluid conduit 200 cited by the Examiner is formed solely within the cooling base plate 160. As such, Kellerman fails to teach or disclose a bi-direction conduit in fluid communication with a backside of a chucking pedestal. Further, in order to avoid any confusion with respect to the term "chucking pedestal," claims 1 and 6 have been amended to more particularly point out that the chucking pedestal is configured "for wafer retention thereon." Again, the wafer 105 in Kellerman is retained on the clamping plate 110, not the base plate 160.

Moreover, with regard to the schematic block diagram shown in Figure 15 of Kellerman, the gas supply and temperature sensor connections are only shown generally connected to element 100, which represents the chuck assembly as a whole. In actuality, no fluid conduits are formed within the clamping plate 110 (chucking pedestal) itself. For at least this reason, therefore, the §102 rejections of claims 1 and 2 have been overcome.

With regard to method claims 14-17, the §102 rejections thereto are also overcome for essentially the same reasoning. Assuming the first element of method claim 14 "placing a wafer onto an electrostatic chucking pedestal" is interpreted as placing substrate 105 onto clamping plate 110 in Kellerman, then the second element of claim 14 "introducing a supply of backside carrier gas to a backside of said electrostatic chucking pedestal" and the elements that follow are not taught or suggested in Kellerman, because backside carrier gas is <u>not</u> introduced to a backside of the clamping plate 110.

Furthermore, the remaining elements of claim 14 are not inherently described by Kellerman, because Kellerman does not teach the use backside carrier gas/vacuum, in conjunction with pressure information (between the wafer and chucking pedestal) to assist with chucking force. Rather, the fluid/gas conduit mechanism taught in Kellerman is in regard to cooling the base plate 160, for the purpose facilitating thermal conduction between the substrate and the chuck. Because this is an entirely different methodology, Kellerman does not anticipate or inherently teach the presently claimed method of implementing pressure assisted electrostatic chucking. Thus, the §102 rejections of claims 14-17 have also been overcome on this basis.

Turning now to the §103 rejections of the remaining claims, the Applicants respectfully submit that none of other cited references provide the missing element(s) from Kellerman. That is, neither Deguchi nor Tong teaches the claimed element of a bi-direction conduit in fluid communication with a backside of a chucking pedestal. On this basis alone, all of the §103 rejections are also overcome on this basis, and it is respectfully requested that each of the same be withdrawn.

Notwithstanding the above, the Applicants traverse the §103 rejections of structure claims 6-13 on the additional basis that Tong fails to teach inner and outer zones of a chucking pedestal that are mechanically decoupled from one another. As best understood from the Examiner's rejection on page 6 of the Office Action, the RF coupling ring 106 in Tong (having a top ring 110 and a bottom ring 112) is interpreted as

teaching an outer zone of a chucking pedestal, while (presumably) electrostatic chuck 102 in Tong represents an inner zone. In the first place, Applicants respectfully submit that the coupling ring 106 in Tong is not in fact a chucking pedestal (either in whole or part), but rather a component that moveably supports a sacrificial hot edge ring 108 that surrounds the chuck 102. See Tong, paragraphs [0025]-[0029]. Thus, Applicants submit that, under a proper interpretation of the teachings of Tong, only a single zone electrostatic chuck 102 is disclosed therein. As best seen in the enlarged cross-sectional view of Figure 6 of Tong, only chuck 102 supports the substrate S. Since the RF coupling ring 106 cannot directly contact any part of the substrate, it is not part of the chuck itself and therefore cannot constitute "an outer zone" of a chucking pedestal as claimed.

Even if the RF coupling ring 106 could somehow be construed as being an outer zone of a chucking pedestal, the Applicants also point out that the ring 106 is not mechanically decoupled from the inner zone, as also claimed. As plainly seen in Figure 4 and stated in paragraph [0034] of Tong, "[t]he bottom ring 112 of the coupling ring 106 is placed ***on*** the step of electrostatic chuck 102…" (Emphasis added). In other words, ring 106 is mechanically coupled to chuck 102.

Accordingly, it is respectfully submitted that, for at least these additional reasons, each of the §103 rejections have now been overcome. Finally, Applicants direct the Examiner's attention to newly added claim 19, which further specifies the concentric disposition of the inner zone (602) of the chucking pedestal with respect to the outer zone (604). Support for this amendment is found at least in Figure 6 of the present application. It is respectfully submitted that none of the cited references teach this feature as well.

For the above stated reasons, it is respectfully submitted that the present application is now in condition for allowance. No new matter has been entered and no additional fees are believed to be required. However, if any fees are due with respect to this Amendment, please charge them to Deposit Account No. 09-0458 maintained by Applicants' attorneys.

Respectfully submitted,
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